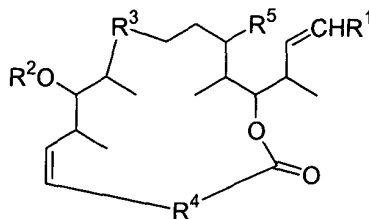


WHAT IS CLAIMED IS:

1. A compound of the following structure



wherein R^1 is H, an alkyl group, an aryl group, an alkenyl group, an alkynyl group, or a halogen atom;

R^2 is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ;

R^a , R^b and R^c are independently an alkyl group or an aryl group;

R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-\text{R}^i\text{SiR}^a\text{R}^b\text{R}^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-\text{NR}^g\text{R}^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

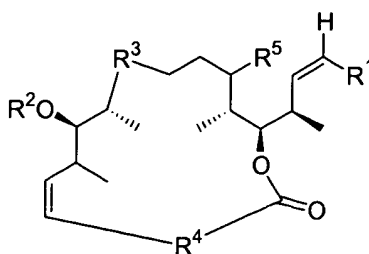
R^3 is $(\text{CH}_2)_n$ where n is an integer in the range of 0 to 5, $-\text{CH}_2\text{CH}(\text{CH}_3)-$, $-\text{CH}=\text{CH}-$, $-\text{CH}=\text{C}(\text{CH}_3)-$, or $-\text{C}\equiv\text{C}-$;

R^4 is $(\text{CH}_2)_p$ where p is an integer in the range of 4 to 12, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{C}(\text{R}^{s1})=\text{C}(\text{R}^{s2})\text{C}(\text{R}^{s3})=\text{C}(\text{R}^{s4})-$, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{CH}(\text{R}^{s1})\text{CH}(\text{R}^{s2})\text{C}(\text{R}^{s3})=\text{C}(\text{R}^{s4})-$, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{C}(\text{R}^{s1})=\text{C}(\text{R}^{s2})\text{CH}(\text{R}^{s3})\text{CH}(\text{R}^{s4})-$, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{CH}(\text{R}^{s1})\text{CH}(\text{R}^{s2})\text{CH}(\text{R}^{s3})\text{CH}(\text{R}^{s4})-$,

wherein $y1$ and $y2$ are 1 and $y3$, $y4$ and $y5$ are independently 0 or 1, R^{k1} , R^{k2} , R^{k3} , R^{k4} and R^{k5} are independently H, CH_3 , or OR^{2a} , and R^{s1} , R^{s2} , R^{s3} , and R^{s4} are independently H or CH_3 , wherein R^{2a} is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ; and

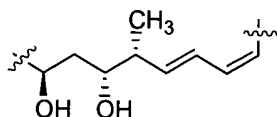
R^5 is H or OR^{2b} , wherein R^{2b} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ; provided that the compound is not dictyostatin 1.

2. The compound of claim 1 with the following stereostructure, or its enantiomer

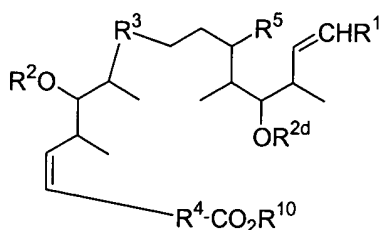


wherein R^1 is alkenyl; R^2 is H; R^3 is $-\text{CH}_2\text{CH}(\text{CH}_3)$ or $-\text{CH}=\text{C}(\text{CH}_3)$; and R^4 is $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{C}(\text{R}^{s1})=\text{C}(\text{R}^{s2})\text{C}(\text{R}^{s3})=\text{C}(\text{R}^{s4})-$ wherein $y1$ - $y4$ are 1, $y5$ is 0, R^{k1} and R^{k3} are OH, R^{k2} is H, R^{k4} is CH_3 , R^{s1} , R^{s2} , R^{s3} and R^{s4} are H, and R^5 is OH.

3. The compound of claim 2 wherein R^1 is $-\text{CH}=\text{CH}_2$ and R^4 is



4. A compound of the following structure



wherein R^1 is H, an alkyl group, an aryl group, an alkenyl group, an alkynyl group, or a halogen atom;

R^2 and R^{2d} are independently H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ;

R^a , R^b and R^c are independently an alkyl group or an aryl group;

R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-\text{R}^i\text{SiR}^a\text{R}^b\text{R}^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-NR^gR^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

R^3 is $(CH_2)_n$ where n is an integer in the range of 0 to 5, $-CH_2CH(CH_3)-$, $-CH=CH-$, $-CH=C(CH_3)-$, or $-C\equiv C-$;

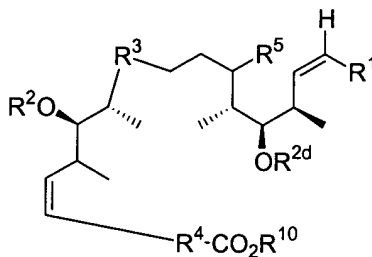
R^4 is $(CH_2)_p$ where p is an integer in the range of 4 to 12, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}C(R^{s1})=C(R^{s2})C(R^{s3})=C(R^{s4})-$, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}CH(R^{s1})CH(R^{s2})C(R^{s3})=C(R^{s4})-$, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}C(R^{s1})=C(R^{s2})CH(R^{s3})CH(R^{s4})-$, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}CH(R^{s1})CH(R^{s2})CH(R^{s3})CH(R^{s4})-$,

wherein $y1$ and $y2$ are 1 and $y3$, $y4$ and $y5$ are independently 0 or 1, R^{k1} , R^{k2} , R^{k3} , R^{k4} and R^{k5} are independently H, $-CH_3$, or OR^{2a} , and R^{s1} , R^{s2} , R^{s3} , and R^{s4} are independently H or CH_3 , wherein R^{2a} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ; and

R^5 is H or OR^{2b} , wherein R^{2b} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ; and

R^{10} is H or alkyl.

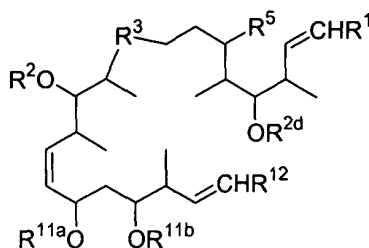
5. The compound of claim 4 with the following stereostructure, or its enantiomer



wherein R^1 is alkenyl; R^2 is H; R^{2d} is H, $OC(O)CH_3$ or $OC(O)NR^gR^h$ wherein R^g and R^h are independently H, an alkyl group or an aryl group; R^3 is $CH_2CH(CH_3)$ or $CH=C(CH_3)$; and R^4 is $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}C(R^{s1})=C(R^{s2})C(R^{s3})=C(R^{s4})-$ wherein $y1$ - $y4$ are 1, $y5$ is 0, R^{k1} and R^{k3} are OH, R^{k2} is H, R^{k4} is CH_3 , R^{s1} , R^{s2} , R^{s3} and R^{s4} are H, R^5 is OH; and R^{10} is H or alkyl.

6. The compound of claim 5 wherein R^1 is $-CH=CH_2$, and R^{2d} is H, $OC(O)CH_3$ or $OC(O)NH_2$.

7. A compound of the following structure:



wherein R^1 is H, an alkyl group, an aryl group, an alkenyl group, an alkynyl group, or a halogen atom;

R^2 and R^{2d} are independently H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ;

R^a , R^b and R^c are independently an alkyl group or an aryl group;

R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-\text{R}^i\text{SiR}^a\text{R}^b\text{R}^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-\text{NR}^g\text{R}^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

R^3 is $(\text{CH}_2)_n$ where n is an integer in the range of 0 to 5, $-\text{CH}_2\text{CH}(\text{CH}_3)-$, $-\text{CH}=\text{CH}-$, $-\text{CH}=\text{C}(\text{CH}_3)-$, or $-\text{C}\equiv\text{C}-$;

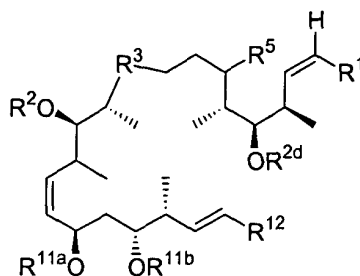
R^5 is H or OR^{2b} , wherein R^{2b} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ;

R^{11a} and R^{11b} are independently H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , COR^e , or R^{11a} and R^{11b} together form a portion of six-membered acetal ring incorporating CR^uR^v ;

R^1 and R^u are independently H, an alkyl group, an aryl group or an alkoxyaryl group; and

R^{12} is a halogen atom, $\text{CH}_2\text{OR}^{2c}$, CHO , CO_2R^{10} , $\text{CH}=\text{CHCH}_2\text{OR}^{2c}$, $\text{CH}=\text{CHCHO}$, wherein R^{2c} is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e , and R^{10} is H or alkyl.

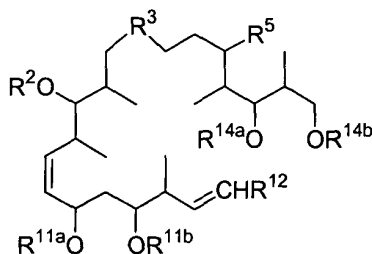
8. A compound of Claim 7 with the following stereostructure, or its enantiomer



wherein R¹ is alkenyl; R^{2d} is H, OC(O)CH₃ or OC(O)NR^gR^h wherein R^g and R^h are independently H, an alkyl group or an aryl group; R³ is CH₂CH(CH₃) or CH=C(CH₃); R^{11a} and R^{11b} are H or together form a portion of a six-membered acetal ring containing C(H)(*p*-C₆H₄OCH₃) or C(CH₃)₂; R¹² is a halogen atom, CH₂OR^{2c}, CHO, CO₂R¹⁰, CH=CHCH₂OR^{2c}, CH=CHCHO, wherein R^{2c} is H, an alkyl group, a benzyl group, a trityl group, -SiR^aR^bR^c, CH₂OR^d, or COR^e, and R¹⁰ is H or alkyl.

9. The compound of claim 8 wherein R¹ is -CH=CH₂, R^{2d} is H, -OC(O)CH₃ or -OC(O)NH₂, and R¹² is -CH₂OH, -CHO or -CO₂R¹⁰.

10. A compound having the following structure:



wherein R² is H, an alkyl group, a benzyl group, a trityl group, -SiR^aR^bR^c, CH₂OR^d, or COR^e; R^a, R^b and R^c are independently an alkyl group or an aryl group; R^d is an alkyl group, an aryl group, an alkoxyalkyl group, -RⁱSiR^aR^bR^c or a benzyl group, wherein Rⁱ is an alkylene group; R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or -NR^gR^h, wherein R^g and R^h are independently H, an alkyl group or an aryl group; R³ is (CH₂)_n where n is an integer in the range of 0 to 5, -CH₂CH(CH₃)-, -CH=CH-, -CH=C(CH₃)-, or -C≡C-;

R^5 is H or OR^{2b} , wherein R^{2b} is H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ;

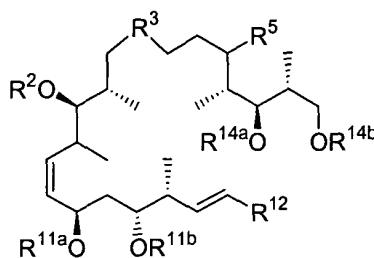
R^{11a} and R^{11b} are independently H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , COR^e , or R^{11a} and R^{11b} together form a portion of six-membered acetal ring containing CR^tR^u ;

R^t and R^u are independently H, an alkyl group, an aryl group or an alkoxyaryl group;

R^{12} is a halogen atom, CH_2OR^{2c} , CHO , CO_2R^{10} , $CH=CHCH_2OR^{2c}$ or $CH=CHCHO$, $CH=CHCO_2R^{10}$, wherein R^{2c} is H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e , and R^{10} is H or alkyl; and

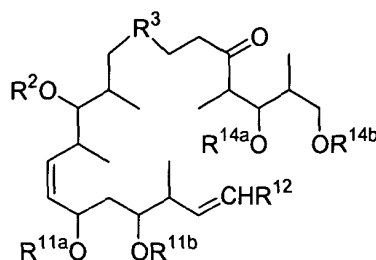
R^{14a} and R^{14b} are independently H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , COR^e , or R^{14a} and R^{14b} together form a six-membered ring containing CR^vR^w , wherein R^v and R^w are independently H, an alkyl group, an aryl group or an alkoxyaryl group.

11. The compound of Claim 10 with the following stereostructure, or its enantiomer



R^2 is H; R^3 is $CH_2CH(CH_3)$ or $CH=C(CH_3)$; R^{11a} and R^{11b} are H or together form a portion of a six-membered acetal ring containing $C(H)(p-C_6H_4OCH_3)$ or $C(CH_3)_2$; R^{12} is a halogen atom, CH_2OR^{2c} , CHO , CO_2R^{10} , $CH=CHCH_2OR^{2c}$, $CH=CHCHO$ or $CH=CHCO_2R^{10}$, wherein R^{2c} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e , and R^{10} is H or alkyl; and R^{14a} and R^{14b} are H or together form a portion of a six-membered acetal ring containing $C(H)(p-C_6H_4OCH_3)$ or $C(CH_3)_2$.

12. A compound having the following formula



wherein R^1 is H, an alkyl group, an aryl group, an alkenyl group, an alkynyl group, or a halogen atom;

R^2 is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ;

R^a , R^b and R^c are independently an alkyl group or an aryl group;

R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-\text{R}^i\text{SiR}^a\text{R}^b\text{R}^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-\text{NR}^g\text{R}^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

R^3 is $(\text{CH}_2)_n$ where n is an integer in the range of 0 to 5, $-\text{CH}_2\text{CH}(\text{CH}_3)-$, $-\text{CH}=\text{CH}-$, $-\text{CH}=\text{C}(\text{CH}_3)-$, or $-\text{C}\equiv\text{C}-$;

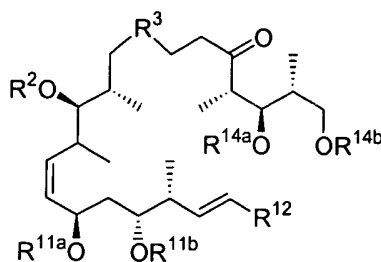
R^{11a} and R^{11b} are independently H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , COR^e , or R^{11a} and R^{11b} together form a portion of six-membered acetal ring containing CR^tR^u ;

R^t and R^u are independently H, an alkyl group, an aryl group or an alkoxyaryl group;

R^{12} is a halogen atom, $\text{CH}_2\text{OR}^{2c}$, CHO , CO_2R^{10} , $\text{CH}=\text{CHCH}_2\text{OR}^{2c}$, $\text{CH}=\text{CHCHO}$ or $\text{CH}=\text{CHCO}_2\text{R}^{10}$, wherein R^{2c} is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e , and R^{10} is H or alkyl; and

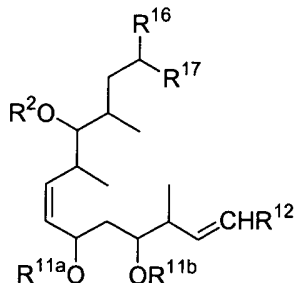
R^{14a} and R^{14b} are independently H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , COR^e , or R^{14a} and R^{14b} together form a six-membered ring containing CR^vR^w , wherein R^v and R^w are independently H, an alkyl group, an aryl group or an alkoxyaryl group.

13. The compound of claim 12 with the following stereostructure, or its enantiomer



wherein R^3 is $CH_2CH(CH_3)$ or $CH=C(CH_3)$; R^{11a} and R^{11b} are H or together form a portion of a six-membered acetal ring containing $C(H)(p-C_6H_4OCH_3)$ or $C(CH_3)_2$; R^{12} is a halogen atom, CH_2OR^{2c} , CHO , CO_2R^{10} , $CH=CHCH_2OR^{2c}$, $CH=CHCHO$ or $CH=CHCO_2R^{10}$, wherein R^{2c} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e , and R^{10} is H or alkyl; and R^{14a} and R^{14b} are H or together form a portion of a six-membered acetal ring containing $C(H)(p-C_6H_4OCH_3)$ or $C(CH_3)_2$.

14. A compound having the following formula



wherein R^2 is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ;

R^a , R^b and R^c are independently an alkyl group or an aryl group;

R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-R^iSiR^aR^bR^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-NR^gR^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

R^{11a} and R^{11b} are independently H, an alkyl group, and aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , COR^e , or R^{11a} and R^{11b} together form a portion of six-membered acetal ring containing CR^tR^u ;

R¹⁷ is CH₂OR^{2f}, CHO, CO₂R¹⁰, wherein R^{2f} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, -SiR^aR^bR^c, CH₂OR^d, or COR^e.

The chemical structure shows a cyclohexene ring with a double bond between the 3 and 4 o'clock positions. Substituents are attached at various positions: R^{11a}O is at the 6 o'clock position (wedged), R^{11b}O is at the 9 o'clock position (dashed), and R¹² is at the 12 o'clock position (dashed). A side chain is attached at the 10 o'clock position, consisting of a CH(R²O) group, a CH₂ group, and a CH(R¹⁶)CH₂(R¹⁷) group. The stereochemistry at the side chain attachment is dashed.

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R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-R^iSiR^aR^bR^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-NR^gR^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

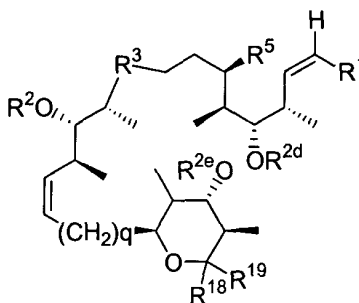
R^3 is $(CH_2)_n$ where n is an integer in the range of 0 to 5, $-CH_2CH(CH_3)-$, $-CH=CH-$, $-CH=C(CH_3)-$, or $-C\equiv C-$;

R^5 is H or OR^{2b} , wherein R^{2b} is H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ;

q is an integer in the range of 2 to 5;

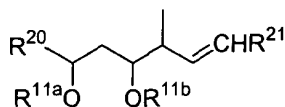
R^{18} is H, and R^{19} is hydroxy, alkoxy or $-SR^z$, wherein R^z is an alkyl group or an aryl group, or R^{18} and R^{19} taken together are =O.

17. The compound of claim 16 with the following stereostructure, or its enantiomer



18. The compound of Claim 17 where wherein R^1 is a $CH=CH_2$ and R^3 is $(Z)-CH=CH-$, or $-CH_2CH_2-$.

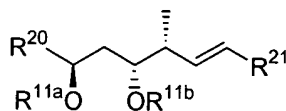
19. A compound having the following structure



R^{11a} and R^{11b} are independently H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , COR^e , or R^{11a} and R^{11b} together form a portion of six-membered acetal ring containing CR^tR^u ;

R^t and R^u are independently H, an alkyl group, an aryl group or an alkoxyaryl group;
 R^a , R^b and R^c are independently an alkyl group or an aryl group;
 R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-R^iSiR^aR^bR^c$ or a benzyl group, wherein R^i is an alkylene group;
 R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-NR^gR^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;
 R^{20} is CH_2OR^{2g} , CHO , CO_2R^{10} ; wherein R^{2g} is H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e , and wherein R^{10} is H or alkyl; and
 R^{21} is a halogen atom, CH_2OR^{2c} , CHO , CO_2R^{10a} , $CH=CHCH_2OR^{2c}$, $CH=CHCHO$ or $CH=CHCO_2R^{10}$, wherein R^{2c} is H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e , and wherein R^{10a} is H or alkyl.

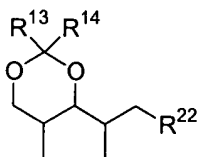
20. The compound of claim 19 with the following stereostructure, or its enantiomer



21. The compound of claim 20 where R^{11a} and R^{11b} are H or together form a portion of a six-membered acetal ring containing $C(H)(p-C_6H_4OCH_3)$ or $C(CH_3)_2$.

22. The compound of claim 21 wherein R^1 is $CH=CH_2$, and R^{21} is CH_2OH , CHO or CO_2R^{10} .

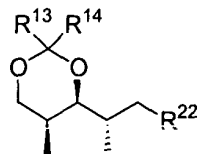
23. A compound having the following formula



wherein R^{13} is H or an alkyl group, R^{14} is H, an alkyl group, an aryl group or an alkoxyaryl group, and R^{22} is a halogen atom or $-P(Ar)_3X$, wherein X is a counteranion selected from the groups halide, tetrafluoroborate, hexafluorophosphate and sulfonate, provided that when R^{13} and R^{14} are methyl groups, X is not I.

24. A compound of claim 23 provided that when R^{13} and R^{14} are alkyl groups, X is not halogen.

25. The compound of claim 23 with the following stereostructure, or its enantiomer

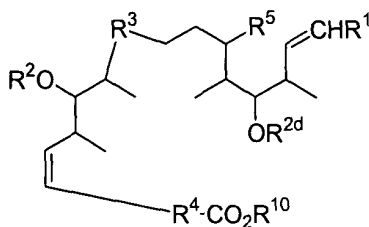


wherein R^{13} is H or an alkyl group, and R^{14} is H, an alkyl group, an aryl group or an alkoxyaryl group, R^{22} is a halogen atom or $-P(Ar)_3X$, wherein X is a counteranion selected from the groups halide, tetrafluoroborate, hexafluorophosphate and sulfonate, provided that when R^{13} and R^{14} are methyl groups, X is not I.

26. The compound of claim 25 wherein R^{13} is H, R^{14} is aryl, and R^{22} is $P(C_6H_5)_3X$.

27. The compound of claim 25 wherein R^{14} is $C_6H_4-p-OCH_3$.

28. A process for conversion of a first compound with the formula



wherein R^1 is H, an alkyl group, an aryl group, an alkenyl group, an alkynyl group, or a halogen atom;

R^2 is H, an alkyl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ;

R^{2d} is H

R^a , R^b and R^c are independently an alkyl group or an aryl group;

R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-R^iSiR^aR^bR^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-NR^gR^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

R^3 is $(CH_2)_n$ where n is an integer in the range of 0 to 5, $-CH_2CH(CH_3)-$, $-CH=CH-$, $-CH=C(CH_3)-$, or $-C\equiv C-$;

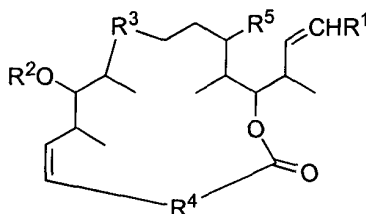
R^4 is $(CH_2)_p$ where p is an integer in the range of 4 to 12, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}C(R^{s1})=C(R^{s2})C(R^{s3})=C(R^{s4})-$, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}CH(R^{s1})CH(R^{s2})C(R^{s3})=C(R^{s4})-$, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}C(R^{s1})=C(R^{s2})CH(R^{s3})CH(R^{s4})-$, $-(CHR^{k1})_{y1}(CHR^{k2})_{y2}(CHR^{k3})_{y3}(CHR^{k4})_{y4}(CHR^{k5})_{y5}CH(R^{s1})CH(R^{s2})CH(R^{s3})CH(R^{s4})-$,

wherein $y1$ and $y2$ are 1 and $y3$, $y4$ and $y5$ are independently 0 or 1, R^{k1} , R^{k2} , R^{k3} , R^{k4} and R^{k5} are independently H, CH_3 , or OR^{2a} , and R^{s1} , R^{s2} , R^{s3} , R^{s4} are independently H or CH_3 , wherein R^{2a} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ;

R^5 is H or OR^{2b} , wherein R^{2b} is H, an alkyl group, an aryl group, a benzyl group, a trityl group, $-SiR^aR^bR^c$, CH_2OR^d , or COR^e ; and

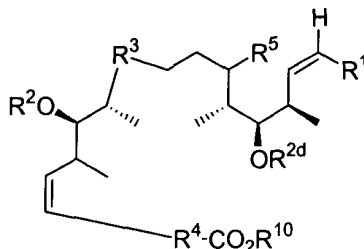
R^{10} is H;

to a second compound with the formula



comprising the step of reacting the first compound under conditions suitable to effect macrolactonization.

29. The process of claim 28 for conversion of a compound with the following stereostructure or its enantiomer



wherein R^1 is H, an alkyl group, an alkenyl group, an alkynyl group, or a halogen atom;

R^2 is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ;

R^{2d} is H

R^a , R^b and R^c are independently an alkyl group or an aryl group;

R^d is an alkyl group, an aryl group, an alkoxyalkyl group, $-\text{R}^i\text{SiR}^a\text{R}^b\text{R}^c$ or a benzyl group, wherein R^i is an alkylene group;

R^e is an alkyl group, an allyl group, a benzyl group, an aryl group, an alkoxy group, or $-\text{NR}^g\text{R}^h$, wherein R^g and R^h are independently H, an alkyl group or an aryl group;

R^3 is $(\text{CH}_2)_n$ where n is an integer in the range of 0 to 5, $-\text{CH}_2\text{CH}(\text{CH}_3)-$, $-\text{CH}=\text{CH}-$, $-\text{CH}=\text{C}(\text{CH}_3)-$, or $-\text{C}\equiv\text{C}-$;

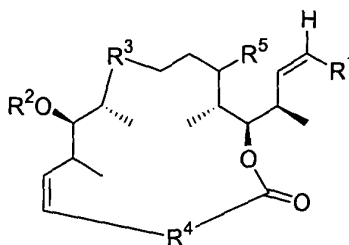
R^4 is $(\text{CH}_2)_p$ where p is an integer in the range of 4 to 12, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{C}(\text{R}^{s1})=\text{C}(\text{R}^{s2})\text{C}(\text{R}^{s3})=\text{C}(\text{R}^{s4})-$, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{CH}(\text{R}^{s1})\text{CH}(\text{R}^{s2})\text{C}(\text{R}^{s3})=\text{C}(\text{R}^{s4})-$, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{C}(\text{R}^{s1})=\text{C}(\text{R}^{s2})\text{CH}(\text{R}^{s3})\text{CH}(\text{R}^{s4})-$, $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{CH}(\text{R}^{s1})\text{CH}(\text{R}^{s2})\text{CH}(\text{R}^{s3})\text{CH}(\text{R}^{s4})-$,

wherein $y1$ and $y2$ are 1 and $y3$, $y4$ and $y5$ are independently 0 or 1, R^{k1} , R^{k2} , R^{k3} , R^{k4} and R^{k5} are independently H, $-\text{CH}_3$, or OR^{2a} , and R^{s1} , R^{s2} , R^{s3} , R^{s4} are independently H or CH_3 , wherein R^{2a} is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ; and

R^5 is H or OR^{2b} , wherein R^{2b} is H, an alkyl group, a benzyl group, a trityl group, $-\text{SiR}^a\text{R}^b\text{R}^c$, CH_2OR^d , or COR^e ; and

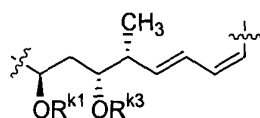
R^{10} is H

to a second compound with the formula



30. The process of Claim 29 wherein R^1 is alkenyl; R^3 is $\text{CH}_2\text{CH}(\text{CH}_3)$ or $\text{CH}=\text{C}(\text{CH}_3)$; and R^4 is $-(\text{CHR}^{k1})_{y1}(\text{CHR}^{k2})_{y2}(\text{CHR}^{k3})_{y3}(\text{CHR}^{k4})_{y4}(\text{CHR}^{k5})_{y5}\text{C}(\text{R}^{s1})=\text{C}(\text{R}^{s2})\text{C}(\text{R}^{s3})=\text{C}(\text{R}^{s4})-$ wherein $y1-y4$ are 1, $y5$ is 0, R^{k1} and R^{k3} are R^{2a} , R^{k2} is H, R^{k4} is CH_3 , $\text{R}^{s1}-\text{R}^{s4}$ are H, and R^5 is OR^{2b} .

31. The process of claim 29 wherein R^1 is $\text{CH}=\text{CH}_2$ and R^4 is



32. The process of claim 28 wherein the first compound is reacted with 2,4,6-trichlorobenzoylchloride.

33. The process of claim 29 wherein the first compound is reacted with 2,4,6-trichlorobenzoylchloride.